Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Murdoch, of that place; who, as early as the year 1791, was engaged in a series of experiments on carburetted hydrogen gas, and was the first person who employed it in lighting apartments, &c. At the last peace, the whole of the buildings at Soho were illuminated by it in a way which occasioned a very grand and unique appearance. Since then, one of the streets of London has been lighted by the same means, and the effect produced is such, as to delight and satisfy every beholder. It is not only more cleanly than the old method, but the light is more beautiful, and far exceeds in intensity any of the lamps hitherto lighted with oil.

*Morveau's Preservative Phials.—From the Same.*

The portable phial contrived by Morveau for preventing contagion may be prepared thus:

Forty-six grains of black oxide of manganese in coarse powder, are to be put into a small strong glass phial, with an accurately ground stopper, to which must be added about two drachm measures of nitric acid of 1,400 specific gravity, and an equal measure of muriatic acid of 1.134; the stopper is then to be replaced, and the whole secured by inclosing the phial in a strong wooden case, with a cap which screws down so as to keep the stopper safe. It is to be used in hospitals, or other places of infection, by simply opening the phial, with the nose averted, and replacing the stopper as soon as the smell of the oxy-muriatic gas is perceived. A phial of this kind properly prepared, may be used several years without loosing its effect. The mixture, however, ought not to occupy more than one third of the bottle.

*Of Lime and Water cement.—From the same.*

Dr. Watson has remarked, that "in countries where they have no common materials for making lime, it would be worth while for the farmer to examine the earth which may be met with on the surface of the ground, or at a little distance below it; for that calcareous substances are not always united into hard compact masses, but are sometimes found in the form of loose earth, and that of different colours."

While writing on lime, some persons may be glad to be informed how a cement may be made with common lime, that will harden under water. What is called *poor* lime has this peculiar property; but as this species of limestone rarely occurs, it is often an expensive article. The following is a good substitute, and may be used for water cisterns, aqueducts, &c.—Mix four parts of gray clay, six of the black oxide of manganese, and ninety of good limestone reduced to fine powder; then calcine the whole to expel the carbonic acid. When this mixture has been well calcined and cooled, it is to be worked into the consistence of a soft paste with sixty parts of washed sand. If a lump of this cement be thrown into water it will harden immediately. Such mortar, however, may be procured at still less expense, by mixing with common quicklime a certain quantity of what are called the *white* iron ores, especially such as are poor in iron. These ores are chiefly composed of manganese and carbonate of lime, or chalk. Common lime and sand only, whatever may be the proportion of the mixture, will certainly become *soft* under water.

*Of Lutes.—From the same.*

Glazier's putty is a very good lute for all common purposes, but it is necessary that the whiting be made thoroughly dry before it be mixed with the oil. Linseed oil and

sifted slacken lime, well mixed, and made thoroughly plastic, form an excellent coating for retorts: if made thicker, this mixture is an impenetrable luting, that is not liable to crack.

Dr. Black recommends a mixture of four parts sand, and one of clay, except where it is to be exposed to an intense heat, and in such situations to use six parts of sand to one of clay.

For *fire*-lute, Mr. Watt directs the use of porcelain clay from Cornwall (not pipe clay) to be pounded small, and mixed up to the consistence of thick paint, with a solution of two ounces of borax in a pint of hot water. For want of this peculiar kind of clay, slacked quick-lime, mixed up in the same manner, may be used. This may be kept ready mixed in a covered vessel. For *cold*-lute he directs to take equal parts by measure of the above clay and wheat flour, and to mix them to a proper consistence with cold water. This is more tenacious than his fire-lute, but does not keep so well.

A very excellent lute for many purposes may be made by beating up an egg, both the white and the yolk, with half its weight in quick-lime in powder. This lute is to be put upon a piece of linen, and applied as usual. It dries slowly, but becomes very compact, and acquires great hardness.

A mixture of martial pyrites and muriate of ammonia forms a good lute for stopping the cracks in iron utensils; but the following artificial compound is preferred, on account of the exact proportions of the ingredients being more easily ascertained. To two pounds of iron turnings or filings, add one ounce of sal ammoniac, and one ounce of flour sulphur; blend the mixture with water till the whole is of a proper consistence, and use it fresh. This lute is employed by engineers to stop the joints of steam engines, and other large machinery.*

Just as this sheet was going to press, I received a letter from an intelligent stranger, informing me that a mixture of salt and whiting, properly kneaded with water, makes a very hard and durable lute for many purposes, particularly for securing the joints of the apparatus which is employed for the production of carburetted hydrogen gas.

---

*Of Dyers' Aqua-Fortis.—From the Same.*

This article is used for dissolving tin, to form a mordant for fixing some of the most valuable colours on woollen clothes. In employing this acid, the dyers in the metropolis generally proceed thus: A carboy of aqua-fortis is measured out into a large earthen pan, with from one to two quarts of water for every gallon of the acid, and the whole is well mixed by stirring it with a strong wooden spatula.

Supposing single aqua-fortis be used, the quantity of water employed generally amounts to about one third of the whole; but as no fixed rule can be given, this is left to the discretion of the workman, who apportions the quantity according to the nature and strength of the acid he is using. When the aqua-fortis and water are thus united, a few handfuls of grained tin are thrown in, in such a manner as nearly to cover the whole of the bottom of the jar. An action immediately commences; and if the aqua-fortis be properly prepared, and the tin uniformly spread, the solution goes on regularly, and

---

* As accidents frequently happen in this country from the bleachers' furnaces cracking, it might be worthy of attention, to try whether this mode of luting would be found to answer to stop the crack.